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THE ECONOMIC IMPLICATIONS OF JAPAN'S AGING POPULATION

Summary

Japan is the midst of a rapid demographic transition that will make its population one of the oldest in the world by the year 2025. At that point there will be only three working-age persons for every retiree, a sharp drop from the current seven-to-one ratio. The aging of Japan's population will have a major impact on saving rates, labor practices and demands for government social expenditures. According to an International Monetary Fund study, government pension and medical care spending will jump from 9 percent of gross domestic product in 1980 to 21.5 percent in 2025.

Tokyo estimates that under its current pension system, the greying of the population will contribute to an increase in the pension insurance contribution rate from its current 12.4 percent of workers' wages to nearly 30 percent. Such a sharp increase in tax rates, the government fears, would spell an end to Japan's economic dynamism. These projections help explain Japan's reluctance to adopt a stimulative fiscal policy that would increase the nation's public debt at the expense of future generations. Changes in the pension system, such as raising the retirement age and lowering benefits, would limit the rise in pension costs.

The Japanese Welfare State

There exists a common perception that Japan's economic success during the postwar era has come at the expense of an adequate domestic social welfare

system. It is generally assumed that Tokyo has instead emphasized policies to enhance its position in international competition. This perception continues to influence studies of Japan's economy; some analysts, for example, still cite the lack of an effective pension system as a factor contributing to Japan's high saving rate.

In fact, Japan's social welfare spending increased at a 15.5 percent average annual pace between FY 1973 and FY 1984, reflecting a conscious decision by the government to improve the quality of life through increased expenditures on welfare, social infrastructure and pollution control. Government social welfare spending rose from 5.2 percent of gross national product in FY 1973 to 11.1 percent in FY 1984 (see Table 1). On a per-capita basis, payments rose fivefold compared to a 2.4 times increase in GNP (see Table 2).

Table 1: Trends In Government Social Welfare Spending In Japan

(percent of gross national product)

Fiscal Year	Medical Care	Pensions	Other*	Total
1970	2.8%	1.1%	0.8%	4.7%
1973	2.9	1.4	0.9	5.2
1975	3.7	2.6	1.4	7.7
1980	4.3	4.3	1.4	10.0
1984	4.4	5.1	1.5	11.1

*Includes unemployment insurance benefits, workers' compensation, and child allowances.

Source: Social Security Research Institute

Table 2: Government Social Welfare Spending and Gross National Product

(in thousands of yen per capita)

	Government Welfare Spending		Gross National Product	
Fiscal Year	Actual Amount	Index	Actual Amount	Index
1970	Y33.7	60.2	Y724.6	67.8
1973	56.0	100.0	1,069.4	100.0
1975	104.3	186.3	1,359.7	127.1
1980	210.2	375.4	2,094.3	195.8
1984	279.3	498.8	2,521.4	235.8

Source: Social Security Research Institute

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The rapid growth in social welfare spending brought Japan closer to international norms, although it remained last among the seven major industrial countries, according to an IMF study. Government social expenditure as a share of Japan's gross domestic product was 17.5 percent in 1981 compared to 20.8 percent in the United States (see Table 3). It should be pointed out, however, that the private sector plays a more important role in this country. According to the IMF, the government accounted for 92 percent of overall social expenditure in Japan in 1980, compared to 68 percent in the United States.

Table 3: Government Social Expenditure in the Major Industrial Countries

(as a percent of gross domestic product)

	Pensions		Health		Other*		Total	
Country	1960	1981	1960	1981	1960	1981	1960	1981
Canada	2.8%	4.6%	2.4%	5.6%	6.9%	11.3%	12.1%	21.5%
France	5.9	11.9	2.5	6.5	5.0	11.1	13.4	29.5
Germany	9.8	12.5	3.1	6.5	7.6	12.5	20.5	31.5
Italy	5.5	13.2	3.2	6.0	8.1	9.9	16.8	29.1
Japan	1.4	4.8	1.3	4.7	5.3	8.0	8.0	17.5
United Kingdom	4.1	7.4	3.4	5.4	6.4	14.9	13.9	27.7
United States	4.2	7.4	1.3	4.2	5.4	9.2	10.9	20.8

*Primarily education.

Source: International Monetary Fund, Aging and Social Expenditure in the Major Industrial Countries, 1980-2025, (1986), p. 60.

Social Security Programs

Until the early 1970s, Japan's social security system was relatively primitive. Government statistics report that in 1960, 82 percent of the elderly lived with their children. The decline in that ratio to 65 percent in 1984 coincided with the development of public pension programs. Government pensions increased at a 14.1 percent real annual rate between 1960 and 1980. Although the share of pensions in national income in Japan is small compared to other countries, this is more a reflection of the smaller share of the elderly in the population rather than the inadequacy of the system. According to Professor Albert Ando of the University of Pennsylvania, Japan's government pension program "is now in many ways substantially more generous than the United States system."

As of April 1984, Japan's public pension programs covered 58.7 million people and paid benefits to 12.5 million recipients. The two major programs, the Employees Pension Insurance and the National Pension Program, each covered about 26 million workers. These programs were supplemented by various schemes for public-sector employees. In addition, private-sector pension programs have grown rapidly and now number over 1,100 corporate programs providing coverage to about 7.25 million workers. Moreover, many firms make lump-sum payments to their employees on retirement.

The EPI provides pensions for employees in the private sector based on earnings and years in the program. At present benefit levels, a retiree with 32 years of enrollment in the system would receive a pension equivalent to 68 percent of the average wage (excluding bonuses). Actually, the average pension is lower, reflecting the short enrollment periods of most current pensioners (see Table 4). The NPP was intended to provide coverage to those not included in other programs, primarily the self-employed, farmers and employees at small enterprises. These pensions are much more modest than those provided under the EPI. Still, there is little poverty among the elderly in Japan, since few people rely on a single pension as their main source of support. In addition to support from their children, about one-fourth of those over 65 work.

Table 4: Pension and Wage Statistics

(thousands of persons and thousands of yen)

	March 1979	March 1984
Average monthly earnings*	Y164.0	Y213.0
Employees Pension Insurance		
Main pension beneficiaries**	1,640.0	2,710.0
Average monthly pension	Y84.0	Y113.3
as percentage of average earnings	51.2%	53.2%
National Pension Program		
Main pension beneficiaries**	4,426.0	6,305.0
Average monthly pension	Y19.4	Y25.9
as percentage of average earnings	11.8%	12.2%
Non-contributory beneficiaries***	3,558.0	2,351.0
Average monthly pension	Y16.5	Y25.1
as percentage of average earnings	10.1%	11.8%

*Corresponds roughly to contract wages, thus excluding bonuses.
**Excludes those who receive partial pensions.
***Those who were aged 50 or over when the National Pension Program was launched in April 1961.

Source: Organization for Economic Cooperation and Development, Economic Survey of Japan, (August 1985), p. 94.

Due to the low premium rate formerly applied, a large percentage of current social security contributions are being transferred to retirees rather than invested for the worker's future retirement. According to a Bank of Japan study, an employee with 30 years participation in the EPI who retired in March 1985 contributed a total of Y4 million ($25,806 at Y155=$1.00) in premiums. This is only a small fraction of the Y26 million ($167,742) in benefits (in terms of present value) to be paid to the participant and his dependents.

In April 1985 the Pension Reform Act was passed to coordinate benefits under the EPI and the NPP and to shore up the plans' financial stability. All

citizens in the future will be covered under the NPP, with the EPI serving as a second-tier entitlement based on earnings. The new law will prevent pension benefits from exceeding 68 percent of the average wage. (Without the reform, it would have eventually risen to 83 percent.) The contribution rate for the EPI, which is borne equally by employer and employee, was raised from 9.1 percent of wages (excluding bonuses) to 11.3 percent for female employees and from 10.6 percent to 12.4 percent for male workers.

In addition, a system of universal medical insurance, which was established in 1961, has provided practically free medical care to the elderly since 1972. About half the cost of the national system is funded by an 8.4 percent tax on wages that is paid by both the employer and the employee. Central and local governments provide about 40 percent of the cost and the remainder is paid by the patient.

Japan's Demographic Transition

Since the 1920s Japan has had the youngest population of any industrial country. According to the 1985 census, 10.3 percent of the country's 121.05 million people were 65 years or over, less than the 11.9 percent in the United States and well below West Germany's 15 percent. But Japan faces a rapid demographic transition in the years ahead as a result of the increase in average life expectancy, which climbed from only 50 years for men and 54 for women in 1947 to the longest in the world in 1985 at 74.8 years for men and 80.5 years for women.

In addition, Japan's birth rate (the number of births per 1,000 persons) fell to 11.9 in 1985, the lowest on record for that country. The drop is attributed to the smaller number of women in their 20s, the prime child-bearing age group, as well as a decline in the fertility rate (the average number of births per woman in her lifetime) from 3.65 in 1950 to 1.8 in 1983. Since this is below the 2.1 rate necessary for a stable population, the Health and Welfare Ministry expects the population to begin declining in the year 2013 after hitting a peak of 136.25 million.

According to projections by the IMF, the proportion of the elderly in Japan's population will double from 9 percent to 18.2 percent between 1980 and 2010, reaching 21.2 percent by the year 2025 (see Table 5). This outlook is more optimistic than most since it assumes that the fertility rate will climb to 2.1. The government's Institute of Population Problems predicts that the number of people aged 65 or over will total 31.89 million by 2020, about 23.5 percent of the country's population.

Table 5: Projected Demographic Changes in the Major Industrial Countries

A. Share of Population Aged 65 and Over

Country	1980	2000	2010	2025
Canada	9.5%	11.4%	12.7%	19.3%
France	14.0	14.0	13.6	15.8
Germany	15.5	17.0	20.7	23.6
Italy	13.5	15.7	16.6	19.0
Japan	9.0	14.9	18.2	21.2
United Kingdom	14.8	15.1	15.8	18.5
United States	11.2	13.0	13.8	19.4
Average	12.5	14.4	15.9	19.5

B. Ratio of Population Aged 65 and Over to Population Aged 15-64

Country	1980	2000	2010	2025
Canada	14.1%	16.7%	18.6%	31.1%
France	22.0	21.7	20.6	24.8
Germany	22.9	25.6	31.9	37.9
Italy	20.9	24.0	25.4	29.8
Japan	13.4	22.1	26.8	34.6
United Kingdom	23.1	23.2	24.0	29.4
United States	16.9	19.6	20.6	31.4
Average	19.1	21.7	24.3	31.2

Source: International Monetary Fund, Aging and Social Expenditure in the Major Industrial Countries, 1980-2025, (1986), p. 60.

While a number of other countries, such as West Germany, are likely to have an even larger share of the elderly, the impact of demographic change will be stronger in Japan because the change will have been more abrupt. The share of Japan's population age 65 and over is expected to double from 7 percent to 14 percent in only 26 years (see Table 6). In contrast, a doubling of this figure is expected to take 70 years in the United States and 130 years in France. The IMF concludes that:

> The impact of the demographic change on the Japanese economy is likely to be the most extreme among the Group of Seven, reflecting both the lateness with which Japan began the demographic transition to a lower fertility rate and a higher life expectancy, and the sharpness of the change that has been experienced.

Table 6: Comparison of Demographic Transition

(percent of population aged 65 or older)

Country	7 percent	14 percent	Doubling time
France	1865	1995	130 years
Sweden	1890	1975	85 years
Australia	1940	2020	80 years
United States	1945	2015	70 years
Italy	1935	1990	55 years
Britain	1930	1975	45 years
West Germany	1930	1975	45 years
Japan	1970	1996	26 years

Source: Ministry of Health and Welfare

The Economic Implications of Demographic Change

Demographic changes have far-reaching economic effects. The growth rate of the population influences the size and structure of the labor force as well

as the composition of demand for goods and services. In addition, it affects the demand for social welfare spending by the government. Some analysts expect the aging of Japan to spell the end of its postwar economic dynamism, which has relied primarily on human resources. Others see an end to Japan's social cohesiveness, as young workers struggle to support the large number of elderly.

The greying of the labor force and its decline in absolute size after the year 2000 may result in a decline in economic efficiency that lowers Japan's growth potential and forces a change in labor practices. It is likely to make the seniority system, under which wages increase in proportion to length of service with a company, too expensive. Moreover, there will be fewer promotion opportunities, further damaging worker morale. The effect of aging on productivity is ambiguous; many argue that the loss of a young and vigorous labor force that is adaptable to new technology will outweigh the benefits of a more experienced work force.

It is clear that the aging of Japan's population will lead to an increase in social welfare expenditure, despite a decline in education expenses resulting from the fewer number of children. The IMF estimates that even if per-capita welfare benefits remain constant in real terms, demographic changes alone will raise government social expenditures 361 percent, or about 4 percentage points of national income over the next 40 years. Moreover, this projection is an optimistic one, since per-capita benefit levels, particularly pensions, are likely to rise faster than inflation. As pensioners' average length of enrollment in the system increases, the average monthly pension will approach its long-run level of 68 percent of current wages.

Table 7: Government Social Expenditures in the Major Industrial Countries

(as percent of gross domestic product)

Country	1980	2000	2010	2025
Japan				
Medical care	4.80%	6.05%	7.08%	8.06%
Pensions	4.20	9.61	12.89	13.40
Education	5.10	4.10	4.60	4.40
Other	1.30	1.30	1.30	1.30
Total	15.40	21.06	25.86	27.16
Canada	20.29	17.35	17.40	20.69
France	31.00	32.44	32.61	35.07
Germany	31.08	33.15	35.30	38.77
Italy	25.06	27.67	30.21	34.66
United Kingdom	22.90	22.94	23.96	26.52
United States	17.67	16.44	16.57	19.44

Source: International Monetary Fund, Aging and Social Expenditure in the Major Industrial Countries, 1980-2025, (1986), p. 56-57.

As Japan's social security system matures, the IMF predicts that pension expenditures will rise from 1980's 4.2 percent of gross domestic product to 13.4 percent in 2025 (see Table 7), much higher than the 6.9 percent projected for the United States. The rise will force a substantial hike in the tax burden of employees and employers. The Ministry of Health and Welfare expects the contribution rate to rise to 28.9 percent by the year 2020 (see Table 8).

Table 8: Pension Cost Projections For Employees' Pension Insurance

(in trillion yen)

Year	Contribution Rate* (percent) Male	Female	Surplus	Reserves	Ratio of Reserves to Annual Expenditure
1986	12.4%	11.3%	Y5.3	Y61.6	5.7
1990	12.4	12.1	5.4	83.2	5.4
1995	14.2	14.2	5.3	111.5	4.4
2000	16.0	16.0	3.4	133.8	3.5
2005	18.7	18.7	0.0	138.6	2.5
2010	23.4	23.4	0.0	138.6	1.7
2020	28.9	28.9	n.a.	n.a.	n.a.

*As percent of basic wages excluding bonuses. Contributions are shared equally by employer and employee.

Source: Ministry of Health and Welfare

Demographic factors are also important in determining medical expenditures, since the frequency and severity of illness increase progressively after age 65. The 9 percent of the population over 65 years old in Japan accounted for 27.4 percent of government medical expenditures in 1980, and that ratio is expected to rise to almost 50 percent in the next 40 years. Demographic factors alone, the IMF estimates, will raise government expenditures in this area by 47 percent in real terms between 1980 and 2025. The increase in government medical expenditures to over 8 percent of GDP in 2025 will force further increases in the contribution rate for medical insurance.

According to the Ministry of Finance, the overall tax burden in Japan will reach a postwar high of 36.1 percent of gross domestic product in FY 1986. Contributions for the government pension and medical insurance programs accounted for 11 percentage points of the total. In the absence of major reforms, this percentage will rise sharply, raising the total tax burden to as high as 50 percent of GDP during the next 40 years. The rise in taxes to such levels in some European countries is responsible for a variety of economic problems that could also develop in Japan.

First, it is likely to lower the saving rate. Assuming the pension eligibility age is raised to 65 years, the 1985 economic white paper projected that the household saving rate would fall from its current level of about 20 percent to between 10 percent and 13 percent in the next 40 years. While this may be considered a plus, given Japan's excess supply of domestic saving and its resulting current account surplus, it could eventually lead to a shortage of investment funds. In addition, higher taxes on the business sector, which must match workers' social insurance payments, will discourage employment gains

and reduce corporations ability to invest, slowing labor productivity gains. (The higher cost of employing workers, though, will encourage business to invest in labor-saving machinery). And finally, higher marginal tax rates will weaken labor's incentive to work.

Demographic Transition and the Fiscal Policy Debate

Japan is under pressure at home and abroad to stimulate its economy. At last February's Group of Seven meeting, Japan agreed to adopt policies to boost domestic demand (see JEI Report No. 8B, February 27, 1987). Monetary policy has already been used extensively -- the central bank has cut the discount rate five times since January 1986 -- resulting in record-low interest rates. The emphasis, therefore, must be on fiscal policy.

The scope for fiscal expansion, though, is limited by the ruling Liberal Democratic Party's goal to end the practice of issuing deficit-covering bonds by FY 1990. This commitment reflects concern over the growth of public debt following the rise in government spending in the 1970s. Fiscal austerity has reduced deficit bonds, which covered 27 percent of central government expenditures in FY 1979, to 9 percent in FY 1987 (see Table 9). Debt service costs, however, have continued to increase to 20.9 percent of total spending (compared to 13.5 percent in the United States).

Table 9: Public Bond Issues, FY 1976-FY 1987

(in billions of yen, initial budget)

	Bond Issues		Dependence**		Outstanding Debt		Debt Service	
		Deficit		Deficit		Percent		Percent of
FY	Total*	Financing	Total	Financing	Total	of GNP	Total	Spending
1976	Y7,275	Y3,750	29.9%	19.3%	Y22,076.7	12.9%	Y1,664.7	6.9%
1977	8,480	4,050	29.7	17.8	31,902.4	16.8	2,348.7	8.2
1978	10,985	4,935	32.0	18.4	42,615.8	20.4	3,222.7	9.4
1979	15,270	8,055	39.6	27.1	56,251.3	25.0	4,078.4	10.6
1980	14,270	7,485	33.5	22.0	70,509.8	28.8	5,310.4	12.5
1981	12,270	5,485	26.2	14.4	82,273.4	31.7	6,654.2	14.2
1982	10,440	3,924	21.0	9.5	86,482.2	35.4	7,829.9	15.8
1983	13,345	6,980	26.5	16.6	109,694.7	38.6	8,192.5	16.3
1984	12,680	6,455	25.0	15.2	121,693.6	40.1	9,155.1	18.1
1985	11,680	5,730	22.2	12.8	134,431.4	41.9	10,224.1	19.5
1986	10,946	5,246	20.2	11.3	143,200.0	42.5	11,319.5	20.9
1987	10,501	4,981	19.4	9.2	n.a.	n.a.	11,333.5	20.9

*Includes both construction and deficit-financing bonds.
**As percent of total revenues.

Source: Ministry of Finance, Financial Statistics of Japan, 1986.

Some influential party leaders, however, have recently urged Prime Minister Yasuhiro Nakasone to postpone or withdraw the fiscal 1990 target and focus instead on boosting economic growth. Although the government outlook calls for 3.5 percent real growth in FY 1987, some economists predict it will fall under 2 percent. Mr. Nakasone's reluctance to abandon the policy of fiscal restraint is more understandable in light of the long-term implications of

an aging society. Although Tokyo will probably take steps to prevent the burden of pension insurance programs from reaching the projected 29 percent of wage income, supporting the elderly will pose a serious problem for the economy. The government believes it is important, therefore, to continue to restrain the issue of government bonds in order to avoid increasing the burden on future generations. Moreover, fiscal policies that permit a decline in the cost of financing the public debt from its FY 1986 level of 3.4 percent of GNP will make Japan's demographic transition less difficult.

Policy Options

The Japanese government is considering reforms to keep the cost of social insurance programs manageable while still meeting its obligations to the sick and elderly. Small policy changes in the 1980s will have a profound impact on the cost of such programs 40 years from now. In addition, long-term policies, such as efforts to stabilize the size of the population through increasing the birth rate or encouraging immigration, could also have important effects.

The obvious policy response to an excessive rise in the cost of social security is to reduce pension benefits, raise the retirement age or some combination of the two. The 1985 Pension Reform Act limits the rise in pension benefits and keeps the contribution rate at 28.9 percent in 2025, well below the 38.8 percent projected under the old system. Additional reductions in future pension benefits would further moderate the increase in the contribution rate. Although this would lower transfers to future retirees, tomorrow's elderly will have earned more income throughout their lives than earlier generations and thus will accumulate more resources for retirement. A recent survey by the Bank of Japan found that people over 60 years of age own more financial assets than any other age group.

Although 60 is the standard eligibility age for pensions in Japan, Tokyo is considering raising it to 65 to encourage workers to remain in the labor force longer, thereby reducing pension costs. The 1985 economic white paper estimated that this would lower contribution rates by 5 percentage points to 23.8 percent in 2025. With the exception of the United States, no other OECD country contemplates raising the pension age for fear of exacerbating already serious unemployment problems. This may become an issue in Japan, which anticipates a rise in its unemployment rate, currently at a record high 3 percent. (Many analysts estimate this rate would be twice as high if it were calculated using the U.S. definition of unemployment.)

Japan's relatively young retirement age, generally set at 55, has made it difficult to raise the initial age for pension benefits to 65. The government has had some success in this area, though. A 1986 survey reported that over 50 percent of corporate employers have adopted a retirement age of 60 years or older. Despite this change, the labor force participation rate for men aged 55-64 years continued to decline from 85.4 percent in 1980 to 83.8 percent in 1984. Public pension programs that encourage workers to remain in the labor force until at least 65 will help limit the rise in pension costs.

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The views expressed in this report are those of the author and do not necessarily represent those of the Japan Economic Institute.